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JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 12. July, 1910. No. 139.

A SUMMER'S BOTANIZING IN EASTERN MAINE AND WESTERN NEW BRUNSWICK.

M. L. Fernald and K. M. Wiegand.

Part II. Technical Notes on Some of the Plants collected.

(Plate 84.)

Lycopodium annotinum L., var. pungens Desv. In dryish heath, Boot Cove, Lubec. Collected also by Kennedy, Williams, Collins, and Fernald at Cutler in 1902 and by Cushman on Great Wass Island in 1907 (Rhodora, xi. 13).

Lycopodium sabinaefolium Willd. Border of dry woods Ingleside, Westfield, N. B. Previously known from the upper St. John.

Potamogeton Vaseyi Robbins. Cove in the St. John River near Ingleside Station, Westfield, New Brunswick. The first station, apparently, east of the Penobscot River.

Panicum tennesseense Ashe. Common in gravel along the Aroostook River, extending to its mouth in New Brunswick; also collected in a clearing in Westfield, N. B., on the lower St. John. Previously unknown in New Brunswick.

Setaria viridis (L.) Beauv., var. Weinmanni (R. & S.) Brand in Koch, Syn. ed. 3, 2690 (1905). A plant differing from the common *S. viridis* in its depressed or spreading habit, narrower leaves (2–6 mm. wide) and slender spikes (excluding the bristles 3–6 mm. thick) is common on railway gravels and by roadsides in various parts of eastern and northern Maine, in New Brunswick and Quebec, and is found locally in Massachusetts. It occurs in such habitats about

the towns of the Lower St. Lawrence, in northern Aroostook Co., Maine, and Madawaska Co., New Brunswick; and the past summer was found by the writers along the Canadian Pacific Railway at Ft. Fairfield, Maine, and at Aroostook Junction, New Brunswick, also on the Washington County Railroad at Pembroke, Maine; and recently it has been collected by Messrs. Walter Deane and Edward L. Rand in dry soil in Swansea, Massachusetts. In the 7th edition of Gray's Manual a somewhat similar plant was included by Hitchcock under var. *breviseta* (Döll.) Hitchc., based upon Döll's *Panicum viride β brevisetum* with "Aehrchen kaum ein wenig von den Hüllborsten überragt."[1] The latter plant, true var. *brevisetum*, was collected in 1884 by Dr. C. W. Swan on dumps at Lowell, Mass., Dr. Swan's material having the bristles only 3–4 mm. long, i. e. scarcely or only slightly exceeding the spikelets, and a similar plant occurs about Boundary Lake in northern Maine and adjacent Quebec. The commoner slender-spiked and narrow-leaved depressed plant of eastern and northern Maine and eastern Canada, however, has its bristles (4–6 mm. long) conspicuously longer than the spikelets and is very satisfactorily matched by material distributed by Degen & Flatt in the *Gramina Hungarica* (No. 4) as *Setaria viridis*, var. *Weinmanni*. It is noteworthy that in the American material as well as in the Hungarian specimens the purplish color of the bristles (a character emphasized by recent European authors) is developed only in a few of the most mature spikes. Roemer & Schultes[2] in their original description of the plant as *Setaria Weinmanni* do not mention the color of the bristles but state that their plant is intermediate between *S. glauca* and *S. viridis*, though Koch[3] in his Synopsis treats it as a small purplish form of *S. viridis*: "minor saepe colore sordide purpureo suffusa," and many subsequent authors have emphasized the purple bristles. From a study of the material at hand, however, it would seem that the purple color is a less significant character of the plant than its habit, narrow leaves, and slender spikes.

Zizania aquatica L. This narrow-leaved plant abounds in the lower waters of the Nerepis River at Westfield, New Brunswick. Although formerly reported from New Brunswick a new record is desirable in view of the recent re-segregation of *Zizania*.

[1] Döll, Fl. Baden, i. 234 (1857).
[2] R. & S. Syst. ii. 490 (1817).
[3] Koch, Syn. 773 (1835–37).

ALOPECURUS GENICULATUS L. In a roadside ditch, Pembroke, Maine. Well known from about Portland, but otherwise unrecorded from the State.

GLYCERIA LAXA Scribn. is abundant in eastern Washington County, Maine, and was collected in Westfield, N. B. It was ordinarily easy to distinguish it from *G. canadensis*, but the number of flowers (the key-character used in the 7th edition of Gray's Manual) proved to be inconstant. In well-developed *G. canadensis* the spikelet is broader and more turgid than in *G. laxa*, but the most marked difference seems to be in the panicles. In the panicle of *G. canadensis* there are 1–3 primary branches at a node, and the panicles are only 2–3 times branched; in *G. laxa* there are ordinarily 3–5 primary branches at the middle nodes, and the panicles are 3–4 times branched.

BROMUS ALTISSIMUS Pursh is the common representative of the group along the St. John and Aroostook Rivers, and herbarium material shows it to occur in many of the river-valleys of the Gaspé Peninsula in Quebec.

ELEOCHARIS ROSTELLATA Torr. Abundant on salt marshes along Winnegance Creek, Phippsburg, Maine. Not previously reported from the state.

SCIRPUS FLUVIATILIS (Torr.) Gray is abundant in the dead water at the mouth of the Nerepis River and below it in the St. John in Westfield, N. B. It had formerly been reported from Perry, Maine, though no specimens from that station can now be found. It is abundant, however, on tidal flats of Winnegance Creek, Phippsburg, Maine, and should be looked for at the estuaries of other tidal streams of the Maine Coast.

CAREX SCOPARIA Schkuhr, var. **tessellata** n. var., humilis 2–4.5 dm. alta; inflorescentiis ovoideis 1.5–2.3 cm. longis; spicis 3–6 confertis ellipsoideo-ovoideis 6–10 mm. longis; squamis brunneis; perigyniis late ellipticis 2 mm. latis quam squama valde latioribus.

Low, 2–4.5 dm. high; inflorescence ovoid, 1.5–2.3 cm. long; spikes 3–6, mostly crowded, ellipsoid-ovoid, 6–10 mm. long; scales brown; body of the perigynia broadly elliptical, 2 mm. wide, conspicuously broader than the subtending scale.— MAINE: damp low ground, Marshfield, July 8, 1902 (*Fernald*); dry low ground, Pembroke, July 8, 1909 (*Fernald & Wiegand, Fernald* no. 1464). This is a peculiar short-headed plant obviously related to *C. scoparia*, but with much broader perigynia which, being wider than the dark subtending scales,

give the spikes a checkered or mottled appearance. It is as yet known only from Washington County, Maine.

Carex arcta Boott. Alluvial woods along the Nerepis River, Westfield, New Brunswick. Not previously recorded from New Brunswick, though known from the upper St. John in Maine.

× Carex helvola Blytt (*C. canescens* × *norvegica*). Plants which were apparently a hybrid of *Carex canescens* and *C. norvegica* were found in a brackish marsh on the east side of Moose Island in Passamaquoddy Bay, and later a similar colony was found in a fresh-water swamp at Pembroke, Me. The specimens are mostly infertile and compare well with Scandinavian material except that the spikes are more remote, a trait traceable to our *C. canescens*, var. *disjuncta* which is more abundant than the typical form in eastern Maine.

Carex maritima O. F. Müller, var. erectiuscula Fernald, Rhodora ii. 170 (1900), known before only from Cushing, Maine, was found in some abundance in a meadow at Pembroke, Maine. The Pembroke plant is much larger than the original Cushing material, the pistillate spikes being 3.5–7.5 cm. long.

Carex aquatilis Wahlenb., var. cuspidata Laestad. was collected in wet meadows four or five miles apart in Pembroke. Though known from the lower St. Lawrence in Quebec, from Nova Scotia, and from northern New Jersey, this variety has not been reported, apparently, from New England. It resembles forms of *C. salina*, but is strongly glaucous.

Carex vaginata Tausch, formerly known in Maine only from the Arbor Vitae swamps of Aroostook County, was found in a small open meadow-like spot in a thicket between Julia's Cove and Boot Cove, Lubec, Maine. In eastern Quebec and northern Maine it ordinarily grows in a carpet of *Hypnum*, but at the Lubec station its roots were in *Sphagnum*.

Carex pennsylvanica Lam., var. lucorum (Willd.) Fernald, abounds on the sunny slope of an esker near the village of Pembroke, Maine, thus extending the known range considerably east of the former supposed limits, on Mt. Desert Island and in the Penobscot Valley.

Carex flava L., var. gaspensis Fernald, Rhodora viii. 200 (1906) was found in profusion along the Meduxnekeag River, in springy places in thickets below Houlton. This variety, with slender subulate perigynia, has previously been known only from river-banks and marl-bogs north of the Baie des Chaleurs.

Juncus dichotomus Ell., var. platyphyllus Wiegand, reported in Rhodora xi. 42, from southern Maine (i. e. upon specimens collected at Wells by Miss Furbish) was found on sand at Falmouth, Me., and later in abundance on the edge of a ditch in a boggy swamp at Pembroke, Me., thus extending its range eastward along the coast nearly to the New Brunswick border.

Juncus Vaseyi Engelm., formerly known in New England only from the Upper St. John Valley, Orono and Clifton in the Penobscot Valley, and the region of Rangeley Lakes, was found forming a few broad stools at the border of a ditch in a boggy meadow near Ayer's Junction, Pembroke.

Juncus **articulatus** × **brevicaudatus**. A colony of plants found in a wet mossy spot on the Charlotte Road, Pembroke, Maine, was infertile and in its inflorescence combined the characteristics of these two common species, some of the inflorescences having 2–4-flowered glomerules, others having them many-flowered.

Habenaria fimbriata (Ait.) R. Br. On the meadows along Hamilton Brook, Lubec, Maine, this species is abundant and there exhibits a remarkable range of variation in the form of the lip. A series of specimens was collected showing the middle lobe of the lip varying in every conceivable degree from broadly fan-shaped with conspicuously fimbriate margin to cuneate-oblanceolate with barely erose tips. No other species of *Habenaria* was observed in the region.

Salix petiolaris Sm., var. angustifolia Anders. This variety, which is usually a low shrub with tufted branchlets and comparatively short narrow entire or sub-entire leaves, is more common in eastern and northern Maine than the typical form of the species which has the mature leaves (7–12 cm. long) conspicuously toothed. Forms of the variety with either glabrate or permanently sericeous leaves are common.

Salix Smithiana Willd. is a common tree willow of roadsides, hedgerows, etc. in southeastern Washington County, Maine (noted in the towns of Eastport, Lubec, and Pembroke). It has spread freely and is now thoroughly established in some places in swampy thickets where it is seen growing among native species.

Comandra livida Richardson. On the heath at the base of West Quoddy Head, Lubec, Maine. All the plants examined were sterile, as were those found at Roque Bluffs by Mr. C. H. Knowlton (see Rhodora ix. 219).

Rumex Patientia L. Throughout the southeastern section of Washington County this is the abundant *Rumex* of all open situations which are not too dry, growing freely in fields, meadows, thickets, and along roadsides. It is fully mature and dull brown in color early in August, when the less common *R. Britannica* is beginning to flower.

Montia fontana.[1] We have in North America three clearly defined species which have generally passed as *Montia fontana*. These may be briefly described as follows:—

A. Seeds dull (except under a lens), conspicuously and closely muricate with bluntish or acutish tubercles: a yellowish green annual with flowers both lateral and terminal, the latter in 3–8-flowered cymes.
1. *M. fontana* L.

B. Seeds lustrous, the tubercles obscure or short and flattened.
A deep green perennial, the branches rooting at the nodes: flowers chiefly in 3–8-flowered lateral cymes, the branches usually terminated by a tuft of leaves; seeds about 1 mm. long, very plump, slightly lustrous.
2. *M. rivularis* Gmel.
Yellowish-green annual, the simple or slightly forking stems not rooting at the nodes: flowers solitary or in pairs from the nodes and tips of the stems and branches: seeds 1–1.6 mm. long, lenticular, highly lustrous . . . . . 3. *M. lamprosperma* Cham.

1. M. fontana L. Sp. i. 87 (1753), in part. *M. minor* Gmel. Fl. Bad. i. 301 (1805). Upper leaves oblong to oblanceolate and sessile: the terminal cymes sessile or short-stalked: mature capsules 2–2.5 mm. in diameter: seeds 1–1.3 mm. long.— Eurasia, Oregon and California. Plate 84 (a).
Var. **tenerrima** (Gray) n. comb. *Claytonia Chamissonis* Eschsch., var. *tenerrima* Gray, Proc. Am. Acad. viii. 378 (1872). *C. Hallii* Gray, Proc. Am. Acad. xxii. 283 (1887). *Montia Hallii* Greene, Fl. Franciscana, 180 (1891), as to synonym. Very slender: leaves mostly broad-spatulate and petioled: cymes often long-stalked: mature capsules 1–2 mm. broad: seeds barely 1 mm. long.— British Columbia to California.
2. M. rivularis Gmel. Fl. Bad. i. 302 (1805).— Europe. Newfoundland: ditches, Holyrood, August 28, 1894, *Robinson & Schrenk*, no. 48. Plate 84 (b).
3. M. lamprosperma Cham. Linnaea, vi. 565 (1831).— Arctic and boreal Europe; northeastern Asia; Alaska; Greenland to eastern Maine. The following specimens from eastern America have been examined. Labrador: Nain, *Lundberg*; Hopedale,

[1] For the plate which shows very clearly the habitat and seed-characters of the segregates of *Montia fontana* we are indebted to the generosity of Mr. F. Schuyler Mathews.

August, 1897, *J. D. Sornborger*, no. 193. NEWFOUNDLAND: Barred Islands, August 20, 1903, *J. D. Sornborger*. QUEBEC: springy places and wet pastures, Ste. Anne des Monts, July 12, 13, 1881, *J. A. Allen;* springy bank, Bic, July 26, 1907, *Fernald & Collins*, no. 1017; brackish shores, Dartmouth River, August, 1904, *Collins, Fernald & Pease*; damp mossy ground, Pointe Nouvelle, Hope, July 30, 1902, *Williams & Fernald*; muddy margins of creeks, Bonaventure River, August, 1904, *Collins, Fernald & Pease.* NEW BRUNSWICK: Shediac, *J. Fowler*, 1883. NOVA SCOTIA: wet meadow, Northwest Arm, Halifax, June 19, 1883, *J. Macoun.* MAINE: in a spring rill, Little River Island, Cutler, July 5, 1902, *Kennedy, Williams, Collins & Fernald*; Great Cranberry Isle, July 5, 1893, *E. L. Rand*; South Duck I., July 17, 1893, *J. H. Redfield.* PLATE 84 (c).

RANUNCULUS DELPHINIFOLIUS Torr., formerly unknown east of the lower Penobscot, was found carpeting the bottom of a muddy pool in Princeton on the St. Croix River.

RANUNCULUS PURSHII Richardson abounds in a shallow spring-hole in an Arbor Vitae swamp by the Meduxnekeag River in New Limerick, Aroostook County, Maine. This station, the first in New England, agrees in its obvious characteristics — a shallow pool and its adjacent muddy shores in an Arbor Vitae swamp — with the stations already known for this local species in the Gaspé Peninsula.

BRASSICA ALBA (L.) Boiss. About Eastport this is the common mustard of roadsides, railroad banks, waste places, etc., and it was found extending locally along the Washington County Railroad as far as Ayer's Junction in Pembroke. Nowhere else have we ever met it except as a casual plant of garden refuse and similar habitats.

AMELANCHIER CANADENSIS (L.) Medic., var. TOMENTULA Sarg. (see RHODORA, xi. 47) occurs locally in rocky woods at Pembroke, Maine. It has formerly been known in Maine only from the southwestern section.

CRATAEGUS COLUMBIANA Howell, var. BRUNETIANA (Sarg.) Egglest. was frequent about Pembroke, Maine, and specimens in the herbarium of the New England Botanical Club also identified by Mr. Eggleston show it to extend southward along the coast to Brunswick (*Miss Furbish*).

CRATAEGUS JONESAE Sarg. This is one of the most characteristic species of the coastal region of Maine, seen at various points from Pembroke to Portland Harbor. A sheet in the herbarium of the New England Botanical Club, collected by Miss Furbish at Skowhegan, shows it to extend inland to the central portion of the state.

Potentilla palustris (L.) Scop., var. villosa (Pers.) Lehm. This handsome variety, noted in Rhodora, xi. 48 from the Gulf of St. Lawrence, is the common form of the species in eastern Washington County, Maine, where it occurs in either fresh or brackish water.

Potentilla palustris (L.) Scop., var. subsericea Becker, Deutsch. Bot. Monatsschr. xv. 85 (1897), which has the leaves silky but lacks the dense glandular pubescence on the peduncles, petioles, etc., was found on the meadows of the Nerepis River at Westfield, N. B., the first station known to us in America.

Agrimonia gryposepala Wallr. occurs in the alluvium of the Nerepis River, Westfield, N. B., and along the Aroostook River, Ft. Fairfield, Maine, thus extending its recorded range slightly northeastward.

Vicia angustifolia Reichard, var. uncinata (Desv.) Rouy & Foucaud. This variety with very narrow elongate-linear and truncate mucronulate leaflets formed depressed mats on the strand at Pleasant Point, Perry, Maine. Similar specimens were collected by Judge J. R. Churchill near Tracadie Beach, Prince Edward Island, in 1901. These are the only American collections of the variety seen by the writers.

Euphorbia serpyllifolia Pers. Two forms of this species, one with green leaves, the other with leaves blotched with crimson, abound in the yard of the Canadian Pacific Railway at Aroostook Junction, Andover, N. B., where they are accompanied by the ordinarily more common *E. maculata* L. and *E. hirsuta* (Torr.) Wiegand.

Euphorbia glyptosperma Engelm. Abundant in the yard of the Canadian Pacific Railway at Hartland, New Brunswick, and in less abundance along the railway at Fort Fairfield, Maine.

Acer rubrum L., var. tridens Wood. A large tree with peculiarly depressed wide-spreading top was called to our attention by Dr. G. U. Hay near his camp at Ingleside Station, Westfield, New Brunswick. This proved to have the characteristic foliage of the var. *tridens*, a variety previously unknown north of Auburndale, Massachusetts, its only known New England station (see Rehder, Rhodora ix. 116).

Rhamnus alnifolia L'Her. occurs locally in a rich swamp on the Charlotte Road, Pembroke, Maine, near a calcareous outcrop. It was also seen in meadows of the St. Croix River below Princeton.

Malva sylvestris L., var. mauretiana (L.) Boiss., which differs from the typical hirsute *M. sylvestris* with sharply angulate-lobed

leaves in being glabrous or glabrescent, in having the leaves more obtusely lobed, and in its deeper colored flowers, was found in waste ground about the site of an old fire at Pembroke, Maine. The only New England material of *M. sylvestris* seen by us — from Rumford, Maine (*Parlin*), Charlotte, Vt. (*Faxon*), and Charlestown, Mass. (*Perkins*) — is of this variety.

Œnothera cruciata Nutt. Open sandy roadside near Round Pond, Charlotte, Maine. Previously unrecorded east of the Penobscot Valley.

Œnothera fruticosa L., var. hirsuta Nutt. Abundant in dry open soil in an old field, Pembroke, Maine; the first station recorded in Maine east of the Penobscot Valley, where it occurs in open woods on the dry slopes of an esker in Alton.

Vaccinium pennsylvanicum Lam., var. angustifolium (Ait.) Gray. Very characteristic shrubs of this usually northern or alpine variety were found on the heath at the base of West Quoddy Head, Lubec, Maine. It had been found in 1902, but unrecorded, by a party from the New England Botanical Club at Cutler, Maine.

Lysimachia **terrestris** × **thyrsiflora**. In the boggy meadow along the St. Croix River between Milltown and St. Croix Junction, Calais, Maine, occurs a *Lysimachia* which in appearance is intermediate between *L. terrestris* and *L. thyrsiflora*, and which we consider a hybrid between these species. In the foliage and density of the raceme the plant is like *L. thyrsiflora*, but the racemes are long and mostly terminal as in *L. terrestris*, though only one plant in hundreds produced inflorescences in 1909. A similar plant was collected with *L. terrestris* by Pres. Ezra Brainerd at Middlebury, Vermont, June 22, 1880.

Fraxinus pennsylvanica Marsh. occurs along the St. John River at Westfield, New Brunswick. It is also found at Fort Kent in northern Maine and therefore presumably throughout the St. John Valley.

Galeopsis Tetrahit L., var. bifida (Boenn.) Lejeune & Courtoir. Two forms of *G. Tetrahit*, quite distinct in appearance, were seen in Washington County; one with large white flowers was found in only one locality near the Eastport Railroad Station, but the other with smaller purplish flowers was much more widely distributed. A study of herbarium material and of European handbooks shows that one of these forms is a well-marked variety of the other, and is so recognized in Europe. *G. Tetrahit* in America may therefore be treated as follows:—

G. Tetrahit L. (typical) Calyx-teeth in fruit 7.5–11 mm. long: corolla large, about 2 cm. long, with broad lower lip; the middle lobe rarely longer than broad, usually rounded, rarely emarginate, the margins flat; the nipples at the base of the lip large: leaves mostly rounded at the base: flowers (in this country) commonly white, often partly suffused with purple, rarely entirely purple.— Apparently much less common in America than the variety, and mostly confined to the north-eastern country. Specimens seen by us:— Quebec: Grand River, Gaspé County, August 15, 1904, *Collins, Fernald & Pease.* Newfoundland: damp meadow near Topsail, Conception Bay, August 12–19, 1901, *Howe & Lang,* no. 1262; moist place in meadow, Torbary, August 21–26, 1901, *Howe & Lang,* no. 1400. Maine: railroad bank, Eastport, August 16, 1909, *Fernald & Wiegand*; Middle Dam, Rangeley Lakes, August 2, 1903, *B. L. Robinson*: in grain fields, Buckfield, September 3, 1897, *J. C. Parlin,* no. 901. New Hampshire: Jefferson, September 14–21, 1873, *Wm. Boott*; East Andover, August, 1903, *M. A. Day*; roadside, Troy, September 11, 1897, *B. L. Robinson,* no. 365. Massachusetts: low ground, Gloucester, August 15, 1897, *W. P. Rich.* Ontario: vicinity of Belleville, July 27, 1876, *J. Macoun,* no. 1342.

G. Tetrahit L., var. bifida (Boenn.) Lejeune & Courtoir, Compend. Fl. Belg. ii. 241 (1831). *G. bifida* Boenn. Prodrom. Fl. Monast. 178 (1824). Calyx-teeth in fruit 5–8 mm. long: corolla shorter (about 14–16 mm. long) and much more slender than in the species, with smaller lower lip; the middle lobe oblong, more or less emarginate, the margins often revolute; nipples at base of lip smaller and narrower: leaves cuneate at base: color of flowers purplish, very rarely white.— The common form especially in southern New England and southward and westward.

Stachys tenuifolia Willd., var. aspera (Michx.) Fernald. A large clump of luxuriant plants was found by a small pond near the tracks of the Grand Trunk Railway, Portland, Maine; apparently the only station in the state.

Elsholtzia Patrini (Lepechin) Garcke. This fragrant plant which has been known as an established weed about Lake Temiscouata, Quebec since 1887, was found in abundance along the Bangor and Aroostook Railroad at New Limerick, Maine. Its appearance at New Limerick, more than one hundred miles south of Lake Temiscouata, indicates that it may be watched for with confidence along the intermediate traffic-lines of northern Maine and New Brunswick.

Linaria minor (L.) Desf. occurs in great abundance about the yard of the Canadian Pacific Railway at Fairville, New Brunswick. It

was noted in Fowler's Catalogue as collected on a ballast wharf at St. John in 1881.

Limosella aquatica L., var. tenuifolia (Wolf) Pers., which has long been on the unverified list as a Maine plant, occurs in brackish mud with *Lophotocarpus spongiosus*, *Samolus floribundus*, etc. along Winnegance Creek, Phippsburg, Maine. *Limosella* was reported by Goodale from Scarboro in 1862 (Proc. Portland Soc. Nat. Hist., i. pt. 1, 57) but no specimens from that station are extant.

Euphrasia Randii Robinson, var. Farlowii Robinson. At the type locality (Dog Island, near Eastport, Maine) and near the light house at the tip of West Quoddy Head, Lubec, this plant seemed to be specifically distinct from the commoner *E. Randii*. The latter plant had larger smoother leaves, and the crimson corollas were yellow or yellowish-green in the throat; while in the var. *Farlowii*, with smaller and thicker densely hirtellous leaves, the more crowded flowers had the white corollas striped with purple, but without the yellow throat. Upon studying a large series of specimens, however, from Newfoundland, Quebec, Nova Scotia, and Maine, these characters were all found to vary to such an extent that they seem at best only varietal.

Euphrasia americana Wettst. is ordinarily a coastal species but it was found in sterile soils as far up the St. Croix Valley as we explored, at Princeton, Maine, and later in New Limerick in southern Aroostook County, Maine. This latter station and one on slaty open soil at Oldtown, Maine, are exceptionally far inland.

Rhinanthus Crista-Galli L. The common American plant treated as *R. Crista-Galli* in the 7th edition of Gray's Manual has the stems (in living plants at least) black-lineolate, and the teeth of the upper lip of the corolla bluish or violet. This form of the species is recognized by European students of the genus as a well-marked variety, var. fallax (Wimmer & Grab.) Druce, Fl. Berks. 384 (1897) based upon *Alectorolophus minor, β fallax* Wimmer & Grab. Fl. Siles i. pt. 2, 213 (1829). It has by some recent authors been known as *Alectorolophus minor*, var. *vittulatus* Gremli, Excursionsf. für die Schweiz ed. 4, 320 (1881). True *R. Crista-Galli*, as interpreted by recent European authors, lacks the black striations on the stem and the violet coloring in the upper lip. This plant was collected on Great Diamond Island in Portland Harbor by Messrs. Bissell and Wiegand, July 5th, and should be watched for elsewhere on our coast. From *R.*

oblongifolius Fernald the typical *R. Crista-Galli* is readily distinguished by its numerous branches (in all but stunted or undeveloped plants), its lance-attenuate leaves, and the strong tendency to blacken in drying.

Galium labradoricum Wiegand, hitherto known in Maine only from the northern half of the state, was found in a sphagnous marsh near the edge of a salt marsh on the east side of Moose Island in Passamaquoddy Bay, Maine.

Galium boreale L. A number of fine plants were found at the edge of a boggy meadow in Pembroke, Maine.

Aster radula Ait., var. strictus (Pursh) Gray was found generally distributed on heaths and boggy swales in Lubec, Maine. It has formerly been known in Maine from Mt. Katahdin and from the Dead River and Rangeley regions.

Iva xanthiifolia Nutt. Many plants three meters high were seen in a thicket with *Solidago canadensis* and other native species near the railroad station at New Limerick, Aroostook County, Maine. The species seemed entirely at home, though presumably of recent introduction.

Bidens hyperborea Greene, Pittonia iv. 257 (1901), discussed in more detail by Fernald in Rhodora x. 201 (1908), has been known only from James Bay and from brackish or saline mud at the estuaries of rivers of the Gaspé Peninsula, Quebec. In August it was found in brackish mud along Winnegance Creek, Phippsburg, Maine, thus extending its range from the north shore of the Baie des Chaleurs.

Matricaria Chamomilla L., var. coronata (J. Gay) Cosson & Germain, differing from the typical form of the species in having the pappus in the form of a broad dentate crown instead of obsolete, is an abundant weed of roadsides, waste-places, sea-strands, etc. in easternmost Maine. This plant, which has the delicious pine-apple fragrance of *M. suaveolens*, was seen in Maine in the towns of Eastport, Lubec, Trescott, Whiting, and Calais, and was afterward seen along the streets of St. John, New Brunswick.

Artemisia frigida Willd. Several clumps were seen in gravel about the yards of the Canadian Pacific Railway, Fairville, New Brunswick, though apparently not so thoroughly established as *A.* ludoviciana Nutt.

Artemisia pontica L., an old garden plant rarely flowering with us, is spreading to roadsides, railroad yards, etc., and should receive recognition in our manuals. It was found in considerable abundance

in the yard of the Grand Trunk Railway at Portland, Maine, and by a roadside in Pembroke, Maine.

ARNICA MOLLIS Hook., var. PETIOLARIS Fernald. A small colony of this plant was found in a marly, springy spot at the foot of a steep bank below the Falls of the Aroostook River about one mile above Four Falls, New Brunswick. This is the first station recorded east of Moxie Falls, Somerset County, Maine.

LAPSANA COMMUNIS L. This plant was found in considerable abundance along the pavement on one of the streets of Rockland. It has previously been found on Mt. Desert Island and perhaps elsewhere, but is a rare plant in Maine.

SONCHUS ARVENSIS L., var. GLABRESCENS Wimmer & Grabowski, Fl. Sil. pt. 2, ii. 220 (1829). In the typical form of the species the peduncles and involucre are more or less densely glandular-hirsute. This form is the ordinary one found throughout the range of the species in America. However, a colony was found along the strand on Carlow Island, Passamaquoddy Bay, the involucres and pedicels of which were entirely glabrous. This evidently is the form recognized in Europe as var. *glabrescens* W. & G. In addition to these plants we have seen specimens of this variety from MAINE: Limestone, September 10, 1896, *Fernald*; Dover, September 1, 1894, *Fernald*. MASSACHUSETTS: Lenox, August 24, 1902, *R. Hoffmann*. OHIO: near Soldier's Home, Erie County, August, 1902, *W. P. Holt*. It seems, therefore, to have a fairly wide distribution.

LACTUCA CANADENSIS L., and L. HIRSUTA Muhl. Although no specimens of *L. hirsuta* were collected, the occurrence of occasional plants of *L. canadensis* with the petioles and midribs of the basal leaves hirsute makes it desirable to distinguish these two species, if possible, by some other characters. A study of the material in the Gray Herbarium and the Herbarium of the New England Botanical Club shows that good characters may be drawn from the achenes, and that there are also some other minor differences. The leaves, though variable as in most species of *Lactuca*, nevertheless show some tendencies which are helpful. The two species differ as follows:—

L. HIRSUTA. Lateral leaf-divisions oblong-obovate, commonly broadest above the base, often more or less truncate, usually dentate: involucre, when fully developed, 16–22 mm. long: mature achenes 7–9 mm. long from base to tip of beak: pappus 9–12 mm. long.

L. CANADENSIS. Lateral leaf-divisions rarely oblong or obo-

vate, usually lanceolate to linear, commonly broadest at the base, usually acute and frequently entire: involucre 10–14 mm. long: mature achenes 5–6 mm. long: pappus 5–7 mm. long.

Hieracium floribundum Wimm. & Grab. This is the common introduced *Hieracium* of the fields and roadsides in southeastern Washington County, Maine, and has been collected as far east as St. John, New Brunswick. It is now established in great abundance around Passamaquoddy Bay, but was first recorded from America by Dr. Kennedy (Rhodora, iv. 25) who found it sparingly at Cutler in 1901.

Explanation of Plate 84.

Fig. a. *Montia fontana*, plant and seed, natural size, and seed × 15.
Fig. b. *M. rivularis*, portion of plant and seed, natural size, and seed × 15.
Fig. c. *M. lamprosperma*, plant and seed, natural size, and seed × 15.

NOTES ON CONNECTICUT MOSSES.

G. E. Nichols.

Since the publication a little over a year ago of "The Bryophytes of Connecticut" [1] a number of additions have been made to the mosses known to occur within the state and, as will appear in the present paper, it has been found necessary to make several changes in the list of species given in the catalogue.

Revision of the Ephemereae.

During the past fall the writer devoted especial attention to the study of the *Ephemereae*, a sub-family of the *Funariaceae* which, according to the classification of Brotherus,[2] contains the two North American genera *Nanomitrium* Lindb.[3] (= *Micromitrium* Aust.[4]

[1] Evans, A. W., and Nichols, G. E. Conn. Geol. and Nat. Hist. Surv. Bull. 11. 1–203. Hartford. 1908.
[2] Engler-Prantl's Natürliche Pflanzenfamilien Part 1. **3**:512. 1903.
[3] Notis. pro Fauna et Flor. Fenn. **13**:408. 1874.
[4] Musci Appal. Exsic. 1870.

not Spruce[1]) and *Ephemerum* Hampe.[2] In both of these genera the leafy shoot is very short and consists merely of a small, bud-like cluster of leaves borne on an exceedingly short stem and surrounding the diminutive sporophyte. The whole plant in *Nanomitrium* is scarcely more than 1 mm. in height, and even in the larger forms of *Ephemerum* rarely exceeds 2 mm. From closely related forms the *Ephemereae* are distinguished by the fact that the green protonema from which the leafy shoots arise persists throughout the life of the plant. In some species, for example in *E. cohaerens*, the protonema becomes discolored with age and is not conspicuous at the time the spores mature; but in many cases, especially in species which, like *E. spinulosum*, grow in very wet places, this structure forms a conspicuous, dark green mat covering the substratum about the leafy shoots. All of the species of *Nanomitrium* and *Ephemerum* are annuals. For the most part they grow in wet or moist localities, particularly in the beds of dried up ponds, and usually in open situations. Although some species occur on gravelly soil, loamy clay or humus appear to afford the most favorable substrata.

As pointed out by Salmon,[3] *Nanomitrium* differs from *Ephemerum* primarily in the fact that in the former genus certain cells of the capsule-wall are differentiated in such a way that the capsule possesses a well marked rudimentary lid. The presence of a lid is indicated in Austin's original description of the genus and is clearly shown in Sullivant's *fig. 6* of his plate of *N. Austini* (Sull.) Lindb.[4] In *Ephemerum*, on the other hand, no traces of such a structure are apparent, but the capsule dehisces irregularly. In *Nanomitrium*, moreover, during the development of the sporophyte the "spore-sac" breaks down, and in the mature capsule the spores are enclosed only by the thin and delicate outer layer of the capsule-wall. In *Ephemerum*, on the contrary, the "spore-sac" persists, so that the ripe spores are enveloped by a firm, double wall of cells. Even under a dissecting microscope this difference in the walls of the mature capsules is easily demonstrated, for while in *Nanomitrium* the capsule is easily broken, it usually requires considerable picking with a needle to release the spores in *Ephemerum*. Other differences between the two genera are the

[1] Catalog. Musc. Amaz. et Andes. 2. 1867.
[2] Flora **20**:285. 1837.
[3] Journ. Linn. Soc. Bot. **34**:163–170. 1899.
[4] Icones Musc. Suppl. *pl. 12*. 1874.

presence of stomata in the capsule-wall of *Ephemerum*, their absence in *Nanomitrium*, and a marked difference in the size of the spores, which are sometimes 80 μ in diameter in *Ephemerum* but rarely more than 35 μ in *Nanomitrium*.

Nanomitrium Austini was described by Sullivant[1] from material collected by Austin at Closter, New Jersey, in 1865. Later, in 1878, Austin found it at Rockland, New York, and these two stations appear to have been the only localities known for this minute moss until the fall of 1909 when the writer collected it in the town of Hamden, Connecticut.[2] The plants there grew on the clayey banks of a ditch and were scarcely perceptible without the aid of a lens. These specimens agree closely with those distributed by Austin.[3] Between *N. Austini* and *N. synoicum* (James) Lindb., our other native species, however, the differences are not great. The spores of *N. synoicum* are said to be more papillose than those of *N. Austini*, and the leaves of the former are often nearly entire, while in the latter they are serrate. One of the most striking differences that the writer has noted between the two is in their size and habit. In *N. Austini* the axis of the leafy shoot is in most cases very short and the whole plant appears almost sessile. In *N. synoicum*, on the other hand, the axis is often 0.65 mm. in length, so that the sporophyte with its enveloping cluster of leaves is perceptibly raised above the level of the ground.

The species of *Ephemerum* appear to be much more widely distributed than those of *Nanomitrium*, yet it is impossible to get any satisfactory idea of their range, partly owing to the fact that on account of their small size they are seldom collected, but principally because the characters which separate the various species are inadequately understood. For example, in "The Bryophytes of Connecticut" *E. serratum* is listed from five stations. The specimens from these various localities were determined by five different authorities. Yet upon careful examination all five specimens were found to be, not *E. serratum*, but *E. spinulosum*.

The classification of species in *Ephemerum* is based primarily on leaf characters, and two general groups may be defined. In one group are placed those forms in which the leaves do not possess a midrib,

[1] Icones Suppl. 21. *pl. 12.* 1874.

[2] Specimens from this station distributed by Holzinger, Musci Acro. Bor.-Amer. No. 268.

[3] Musci. Appal. Exsic. No. 45. 1870.

but consist throughout of a single layer of cells. To this group belong *E. megalosporum* (Aust.) Salm. and *E. serratum* (Schreb.) Hampe. These two species are readily distinguished. In *E. megalosporum* the leaves are obscurely serrulate, and stomata are present in the upper, as well as in the lower, part of the capsule-wall. In *E. serratum* the leaves are strongly serrate, while the stomata are restricted to the base of the capsule.

The second group includes all species in which the leaves possess a midrib. The midrib, however, even when present may easily be overlooked, since it is very poorly defined and in most species consists of little more than a double layer of cells which are similar in size and form to the ordinary cells of the leaf. The species in this group may be further divided into two well defined sub-groups. In the first, of which *E. cohaerens* (Hedw.) Hampe appears to be the only North American representative, the leaves are ovate-lanceolate in shape and are smooth or nearly smooth, except on the midrib. *E. cohaerens* is the most robust of our native *Ephemereae*. To the second sub-group belong *E. crassinervium* (Schw.) C. Müll., *E. papillosum* Aust., *E. spinulosum* Schimp., *E. sessile* (Br. & Sch.) C. Müll., and *E. hystrix* Lindb., of which the first three have been found in Connecticut. These differ from *E. cohaerens* in their more delicate habit and narrower, more lanceolate leaves which are always more or less papillose on one or both surfaces. Cardot[1] considers *E. papillosum, spinulosum, sessile,* and *hystrix* simply as well marked varieties of *E. crassinervium*. But after a careful examination of a considerable number of specimens of the three Connecticut species the writer has arrived at the conclusion that these, at any rate, are worthy of specific rank.

The characters which distinguish *E. crassinervium* from *E. spinulosum* are difficult to describe. Often some of the leaves of an *E. spinulosum* plant are indistinguishable from leaves of *E. crassinervium,* so that it is only after a careful examination of all the leaves of a specimen that its identity can be established. In both species the leaves taper gradually to the apex and are serrate, especially in the upper half. In typical leaves of *E. crassinervium,* the teeth are relatively short and are produced by the slight protrusion of the upper ends of some of the marginal cells. In *E. spinulosum,* on the

[1] Bull. Herb. Boissier **7**:361–363. 1899.

other hand, the teeth are much longer and as a rule a much greater portion of the tooth-producing cell protrudes; in many cases, in fact, almost the entire cell projects outward in the form of a tooth, and frequently the whole upper half of the leaf is little more than an excurrent midrib from which long teeth project in all directions. *E. papillosum* differs from the two species above mentioned in its broader, much more papillose leaves, and in the structure of its calyptra which is rendered markedly papillose by the projection of the outer walls of its cells. According to Austin's description [1] the leaves of *E. papillosum* are narrower than those of *E. crassinervium* but an examination of Austin's specimens of both species has failed to verify this observation. The character of the leaf margin is intermediate between that of *E. crassinervium* and *E. spinulosum*.

The revised list of *Ephemerum* species found in Connecticut is here given.

E. megalosporum: Orange (Evans, 1891).

E. cohaerens: East Haven (Evans, 1891), New Haven (G. E. N.).

E. crassinervium: Branford (G. E. N., 1909).

E. papillosum: New Haven and North Haven (G. E. N., 1909).

E. spinulosum: Hartford (Miss Lorenz), East Haven (Evans), New Haven (G. E. N.), Orange (J. A. Allen, 1879), Oxford (Harger), Portland (G. E. N.), and Norwich (Setchell).

For the sake of convenience the diagnostic characters of these five species are summed up in the following key.

1. Leaves without a midrib 2
   Midrib present, although often indistinct 3
2. Leaves obscurely serrulate; stomata present in upper half of capsule *E. megalosporum.*
   Leaves strongly serrate; stomata restricted to base of capsule. *E. serratum.*
3. Leaves ovate-lanceolate, smooth except on the midrib . *E. cohaerens.*
   Leaves narrowly lanceolate, distinctly papillose 4
4. Calyptra conspicuously papillose . . . . . *E. papillosum.*
   Calyptra smooth or nearly so 5
5. Teeth in apical half of leaves usually short . . . . *E. crassinervium.*
   Teeth in apical half of leaves usually long . . . . *E. spinulosum.*

The writer is about to undertake a revision of the North American species of *Nanomitrium* and *Ephemerum*, and a considerable amount of material for study is already at hand. Since, however, it is desired to make the work as thorough and comprehensive as possible, it will be greatly appreciated if American bryologists will cooperate through the loan or exchange of specimens.

[1] Musci Appal. Exsic. No. 50. 1870.

Recent Additions.

Physcomitrium immersum Sull. Three stations for this interesting North American species were found during the autumn of 1909, viz.— Hartford (Evans), Wethersfield (Miss Lorenz), and Portland (G. E. N.). In all three localities the plants grew on damp sand or clay in places which are usually flooded during the spring by the water of the Connecticut river. Although not heretofore reported from New England it is probable that *P. immersum* is not uncommon here, at least in the valley of the Connecticut river. Outside of New England it has been found as far north as Quebec [1] and ranges south and west to Delaware and Colorado respectively. This species is frequently confused with *Aphanorrhegma serratum* (Hook. & Wils.) Sull., to which it bears a close resemblance. Even in the field, however, the two may be separated from one another with reasonable certainty, *P. immersum* being somewhat more robust than the *Aphanorrhegma*, and where abundant occurring in lax tufts which are quite different from the more or less depressed tufts of *Aphanorrhegma*. Moreover, as pointed out by Mrs. E. G. Britton,[2] in *Aphanorrhegma* the capsule splits exactly in the middle and the cells of the capsule-wall possess pronounced collenchymatous thickenings at their angles, while in *P. immersum* the line of dehiscence is invariably situated above the middle of the capsule and the cells of the capsule-wall are relatively thin-walled throughout.

Aulacomnium androgynum (L.) Schw. This species has been collected in New York (Miss Marshall), Maine (J. F. Collins), and Massachusetts (C. E. Faxon, and others), but the writer has been unable to find references to its occurrence in other eastern states. The Connecticut station is in the town of Branford (G. E. N., 1909), where the plants grow in considerable abundance in crevices of gneissoid ledges at the border of a salt marsh. *A. androgynum* apparently does not fruit in eastern North America, but it may readily be distinguished from other species of Aulacomnium by its peculiar organs of vegetative reproduction. These consist of fusiform, multicellular gemmae borne on short stalks and produced in great numbers at the tips of slender pseudopodia. The densely crowded masses of gemmae

[1] Macoun, J., Cat. Can. Plants. **6**:120. 1892.
[2] Bull. Torr. Bot. Club. **21**:190, 191. 1894.

have the shape of minute balls. *A. palustre* (L.) Schw. also produces pseudopodia which bear at their apices gemmiform "Brutblätter," but the latter are obviously merely small metamorphosed leaves and are not at all like the gemmae of *A. androgynum*.

Philonotis marchica (Willd.) Brid. (= *P. Muhlenbergii* Schw.) Although *P. fontana* (L.) Brid. is the only species of the genus credited to Connecticut in the 1908 list, *P. marchica* should also have been included. This had been reported from the state (as *P. Muhlenbergii*) by Renauld and Cardot,[1] but the reference was overlooked. The specimens upon which this report was based were collected in Cornwall (1887) by Prof. H. A. Green and were determined by Cardot. The writer has recently collected it in Salisbury also. In the opinion of both Cardot [2] and Dismier [3] *P. Muhlenbergii* is not distinct as a species from *P. marchica*. *P. marchica* ranges throughout the northern United States and Canada and has been reported from all the New England states except New Hampshire.

Philonotis caespitosa Wils. In connection with a revision of the North American species of *Philonotis* which he has just completed, Dismier has kindly examined all the available Connecticut material of this genus and finds that a number of specimens which have passed as *P. fontana* should be referred to *P. caespitosa*. Previous to Dismier's critical study of the genus this species had not been recognized as occurring at all on the North American continent, although it was known to be not uncommon in Europe and had been reported from Greenland. Apparently, however, it is widely distributed, at least through the eastern half of the continent. Dismier reports it from all the New England states but Vermont, and in the herbarium of the New York Botanical Garden are specimens from New York, New Jersey, Pennsylvania, Ohio, and Wisconsin, as well as from Newfoundland and New Brunswick. The Connecticut stations are: Salisbury and Stafford (G. E. N.), Canterbury (Mrs. Hadley), Easton (Eames), Huntington and Hamden (G. E. N.), New Haven (Eaton, 1856), and Ledyard (G. E. N.).

The characteristics by which the Connecticut species of *Philonotis* may be distinguished are indicated in the following key:

1. Marginal teeth of stem leaves always simple and sharp; papillae situated at the upper angles of the leaf cells . . . . . *P. marchica*.

[1] Musci Amer. Sept. 32. 1893.
[2] Bull. Herb. Boissier **7**:307. 1899.
[3] Rev. Bryol. **34**:50, 51. 1907.

Marginal teeth of stem leaves double, at least in the lower part of the leaf; papillae, at least in the basal half of the leaf, situated in the lower angles of the cells, or in the middle 2

2. Stem leaves falciform, not plicate, margin plane; perigonial leaves acute . . . . . *P. caespitosa.*

Stem leaves rarely falciform, plicate at base, margin revolute below middle of leaf; inner perigonial leaves obtuse . . . . . *P. fontana.*

Pterigynandrum filiforme (Timm) Hedw. According to Dr. Grout[1] this moss is not uncommon, but it had apparently been overlooked in Connecticut until the fall of 1909 when the writer happened to discover a few sterile, depauperate specimens growing on a dry ledge in the town of Bethany. In its general aspect, as remarked by Grout, *P. filiforme* resembles some of the species of *Leskea*. The plants ordinarily have, however, a marked yellowish cast, the branches are usually numerous and are all curved at the tip, pointing in the same direction, while frequently slender flagelliform branches are developed. The leaf cells are considerably longer than in *Leskea*, except on the flagelliform branches where they are often quite short.

Pogonatum brachyphyllum (Michx.) Beauv. This typically southern seaboard species has been collected in most of the states bordering on the coast from Texas to New Jersey, but heretofore it has not been reported from New England. During the past fall the writer had the good fortune to find it in the town of Branford. The plants grew on earth underneath a large bowlder near the shore of Long Island Sound, the entire colony being restricted to an area less than five feet in length by one in width. A search of the adjacent shore line for several miles has as yet failed to reveal further traces of this interesting form. The plants first collected bore either immature or old sporophytes, but a recent collection shows that the spores are ripe in this latitude about the middle of April. *P. brachyphyllum* resembles somewhat the common *P. tenue* (Menz.) E. G. Britton, but it is readily distinguished by its blunt, entire leaves.

Drepanocladus aduncus (L.) Warnst.

All specimens listed in "The Bryophytes of Connecticut" as *Drepanocladus aduncus* (L.) Warnst. (p. 168) must be referred to *D. subaduncus* Warnst. (p. 168). *D. aduncus* has not yet been found in Connecticut, although it is probable that it occurs in the more northern,

[1] Mosses with Hand Lens and Microscope. 255. 1908.

hilly parts of the state. Concerning the identity of the true *D. aduncus* (=*Hypnum aduncum*) the most varied opinions have been and are still held by bryologists. What appears to the writer to be the most satisfactory solution of the problem has been offered by Warnstorf, and the views of this author, as stated in a recent letter, will be presented briefly. That the binomial *Hypnum aduncum* was first used by Linnaeus [1] is universally admitted. Hedwig,[2] however, misunderstood the application of the name as used by Linnaeus and described as *H. uncinatum* the same moss to which Linnaeus had already given the name *H. aduncum*, while at the same time [3] he misapplied the latter name to a collective group of *Harpidium* (=*Drepanocladus*), forms having falcate leaves, with the diagnosis: "Trunco erecto, ramis patulis, foliis ovato-acuminatis incurvis summitatum secundis...." From this group several species, viz.— *H. Kneiffii* Schimp., *H. Sendtneri* Schimp., etc., have since been split off, and at the present time opinion is divided as to the identity of Hedwig's *H. aduncum*. In view of these facts, and with the hope of clearing up matters, Warnstorf, following the procedure of S. O. Lindberg,[4] has dropped the Hedwigian combination *H. uncinatum*, which had been retained by most bryologists, in favor of the original Linnaean name *H. aduncum*, while he has designated as *Drepanocladus subaduncus* a *Harpidium* form which Hedwig certainly included in his *H. aduncum* group. To sum up, *Hypnum aduncum* Hedw. of American bryologists should be called *Drepanocladus subaduncus* Warnst., while *Hypnum uncinatum* Hedw. of American bryologists should be called *Drepanocladus aduncus* (L.) Warnst., the binomial *H. uncinatum* being thus dropped altogether.

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Yale University.

[1] Species Plantarum 1126. 1753.
[2] Descr. et Adumbr. Musc. 4:65. *pl. 25.* 1797.
[3] L. c. 62. *Pl. 24.*
[4] Musci Scandinavici. 33. 1879.

RANGE EXTENSION OF SCIRPUS SMITHII VAR. SETOSUS.

Bayard Long.

During a somewhat critical examination, recently, of the material of *Scirpus debilis* in the Herbarium of the Philadelphia Botanical Club, I found two sheets which were very evidently to be referred, not to *S. debilis*, but to *S. Smithii* — slender plants with the erect involucral leaf, and the characteristic, very flat achene. But the interesting feature was the presence of a perianth of four or five long slender bristles, in these specimens. Formerly, as herbarium material shows, these two species were very commonly separated by the presence or absence of bristles: plants with bristles being apparently referred without question to *S. debilis* and those without bristles, to *S. Smithii*. But it has been shown by Prof. Fernald that the distinguishing characters are to be found in the achene rather than the perianth, and that there is a form of *S. Smithii with* bristles and one of *S. debilis without* bristles.[1] The latter condition (of a variety differing from the species in the absence of bristles) is paralleled, as is well known, in several other Cyperaceae: *Eleocharis palustris* var. *calva*, *E. Engelmanni* var. *detonsa*, and the lately described *E. intermedia* var. *Habereri*.

Our two sheets are from Clementon, Camden Co., New Jersey, and Middletown, New Castle Co., Delaware. Another specimen in the Herbarium of the Academy, from Milford, Del., represents the same form. A few culms and achenes were removed and sent to Prof. Fernald and he has kindly verified their identification as *S. Smithii* var. *setosus*. Since this plant has been formerly known only from Maine, western Massachusetts and Illinois, our plants make a considerable southerly range extension. As Prof. Fernald suggests in his letter, from the scattered localities previously known, a natural expectation was that the variety would turn up probably throughout the range of the species. It is of interest to have, in part at least, shown this to be true. He further says: "In New England, varieties differing in the presence of absence of the perianth are usually — always so far as we have evidence — found quite by themselves and not mixed with the other form." Our stations very probably represent this condition, but conclusive evidence, as of field-notes, is naturally lacking. The

[1] Rhodora, III. 250 (1901).

material representing the Clementon station, however, consists of two plants on the sheet, and both are of the same form.

A suggestive point, however, comes out when the distribution and habitat of the typical form, and of the variety, in the Philadelphia region, is looked into. All our typical *S. Smithii* comes, so far as I know, from the immediate shores of the main course of the Delaware River, commonly within tide-water limits, and frequently submerged at high-water; while the three stations for the variety are a considerable distance back from the river,— in the case of Clementon about eleven miles — and naturally have a habitat distinctly different, the Clementon station being a fresh-water pond. This may all be coincidence, however, but it would seem to show that there are interesting points still to be solved concerning the distribution and habitat of species and varieties of this class.

Academy of Natural Sciences, Philadelphia.

Tetraplodon australis in Massachusetts.— While collecting lichens near a small pond in the vicinity of North Brookfield, Mass., in June, 1908, I found in the sphagnum near the edge of the pond, a moss which I did not recognize. Later this proved to be *Tetraplodon australis* Sull. & Lesq. So far as I know this moss has not before been reported from Massachusetts, possibly not from New England.— Frank Dobbin, Shushan, New York.

Note on Scheuchzeria palustris L.— The records in the hands of the Local Flora Committee show that this is a rare plant in the Boston District — partly from lack of mossy peat-bogs, perhaps. I found a good station for this species in Sharon, Massachusetts, June 27, 1909. Back of Billings Pond is a smaller pond surrounded by woods, but with a wide margin of peat-moss. In this moss was the *Scheuchzeria*, along with such other bog-lovers as *Decodon verticillatus* (L.) Ell., *Andromeda glaucophylla* Link., and *Gaylussacia dumosa* (Andr.) T. & G. The last was still in blossom, but the *Scheuchzeria* was already well fruited. This record was accidentally omitted from the list.— C. H. Knowlton, for the Local Flora Committee.

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F. Schuyler Mathews del.

MONTIA FONTANA (a), RIVULARIS (b), AND LAMPROSPERMA (c).

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